

Please replace the paragraph beginning on page 4, line 15 with the following paragraph:

D1
The present invention provides an integrated reaction and separation device that overcomes the disadvantages of the prior art discussed above.

Please replace the paragraph beginning at page 4, line 22, with the following paragraph
(second amendment to this paragraph):

D2
--In a preferred embodiment, the device comprises a body, preferably a molded polymeric part, having formed therein a reaction chamber for chemically reacting a sample, a separation region for separating components of the sample, and a transition region connecting the reaction chamber to the separation region. Additionally, the device includes at least one valve in the transition region for controlling the flow of fluid between the reaction chamber and the separation region. Further, the portion of the body defining the transition region has sufficiently low thermal conduction so that the transition region substantially thermally isolates the reaction chamber from the separation region.--

Please replace the paragraph beginning on page 5, line 4 with the following paragraph
(second amendment to this paragraph):

D3
--The body may be surrounded by external, functional components such as differential pressure sources, electro-motive sources, heaters, light sources, and optical detectors. In the preferred embodiment, the reaction chamber is an amplification chamber for amplifying nucleic acid in the sample. Also in the preferred embodiment, the separation region comprises a separation channel, e.g., an electrophoresis column or capillary containing a suitable matrix material, such as electrophoresis gel or buffer, for separating nucleic acid fragments in the sample. In one embodiment, the device further includes at least two electrodes coupled to the body, the electrodes being positioned to induce the sample components to separate into bands in the separation channel when a voltage difference is applied between the electrodes.--